

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763

Lab ID: N00004218 Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

N00004218001

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

03/02/2009

Sampler's Name:

09:55 GEOFF KLEIN/ JUSTIN FISH

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To:

TDEC-DWS TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

03/02/2009

14:00

Received By:

P D Wilson

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT UNITS MDL		MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	62	mg/L	3.8	10	P Leathers	3/3/2009

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

Conductivity:

Temperature:

pH:

Other:

Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	59	mg/L	0.7	1	P Leathers	3/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004218002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

03/02/2009 10:00

Sampler's Name:

GEOFF KLEIN/ JUSTIN FISH

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-DWS 327.39-12

Billing Code: Send Report To:

TDEC-DWS TDEC-DWS

Agency Invoiced: **Priority Date:**

Date/Time Received:

03/02/2009 14:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity:

Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	68	mg/L	3.8	10	P Leathers	3/3/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	57	mg/L	0.7	1	P Leathers	3/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004218003

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

03/02/2009 10:30

Sampler's Name:

GEOFF KLEIN/ JUSTIN FISH

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To: 327.39-12 TDEC-DWS TDEC-DWS

Agency Invoiced:

Priority Date:

03/02/2009 14:00

Date/Time Received: 03/02/200

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity:

Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	79	mg/L	3.8	10	P Leathers	3/3/2009

TEST: Hardness, Calcium	ME.	,				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	65	mg/L	0.7	1	P Leathers	3/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004218004

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

03/02/2009 10:35

Sampler's Name:

GEOFF KLEIN/ JUSTIN FISH

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12 TDEC-DWS

Send Report To: Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

03/02/2009 14:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	alinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	85	mg/L	3.8	10	P Leathers	3/3/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	65	mg/L	0.7	1	P Leathers	3/3/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



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TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763 Lab ID: N00004218 Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

N00004218001

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

03/02/2009 09:55

Sampler's Name:

GEOFF KLEIN/ JUSTIN FISH

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To: Agency Invoiced: TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

03/02/2009 14:00

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	03/03/2009				A Wilson	3/3/2009	

TEST: ICP-MS	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	Ų	μg/L	0.93	5	M Pattanayek	3/3/2009
Barium	27	μg/L	2.5	5	M Pattanayek	3/3/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/3/2009
Cadmium	. U	μg/L	0.41	1	M Pattanayek	3/3/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	3/3/2009
Cobalt	0.13J	μg/L	0.04	1	M Pattanayek	3/3/2009
Lead	0.12J	μg/L	0.10	1	M Pattanayek	3/3/2009
Manganese	U	μg/L	0.42	1	M Pattanayek	3/3/2009
Selenium	Ų	μg/L	1.3	5	M Pattanayek	3/3/2009
Thallium	0.16J	μg/L	0.03	1	M Pattanayek	3/3/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	3/3/2009

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	3/3/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004218002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

03/02/2009 10:00

Sampler's Name:

GEOFF KLEIN/ JUSTIN FISH

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To:

TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

03/02/2009

14:00

Received By:

P D Wilson

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/03/2009				A Wilson	3/3/2009

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

Conductivity:

Temperature:

pH:

Other:

Flow:

TEST: ICP-MS	MET	THOD: EPA 20	0.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Arsenic	U	µg/L	0.93	5	M Pattanayek	3/3/2009	
Barium	25	μg/L	2.5	. 5	M Pattanayek	3/3/2009	
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/3/2009	
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/3/2009	
Chromium	· U	μg/L	2.0	5	M Pattanayek	3/3/2009	
Cobalt	0.18J	μg/L	0.04	1	M Pattanayek	3/3/2009	
Lead	0.20J	μg/L	0.10	1	M Pattanayek	3/3/2009	
Manganese	33	μg/L	0.42	1	M Pattanayek	3/3/2009	
Selenium	U	μg/L	1.3	5	M Pattanayek	3/3/2009	
Thallium	0.04J	μg/L	0.03	1	M Pattanayek	3/3/2009	
Vanadium	U	μg/L	3.4	5	M Pattanayek	3/3/2009	

TEST: Mercury	ST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.13	0.2	A Wilson	3/3/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004218003

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.: Station No.:

Date/Time Collected:

03/02/2009 10:30

Sampler's Name:

GEOFF KLEIN/ JUSTIN FISH

County:

ROANE - 73

Sample Matrix: EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-DWS

Send Report To: Agency Invoiced:

327.39-12 **TDEC-DWS** TDEC-DWS

Priority Date:

Date/Time Received:

03/02/2009 14:00

Received By:

P D Wilson

Field Determinations

:Hq

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	MET	METHOD: EPA 200.2				·
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/03/2009				A Wilson	3/3/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/3/2009	
Barium	29	μg/L	2.5	5	M Pattanayek	3/3/2009	
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/3/2009	
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/3/2009	
Chromium	U	μg/L	2.0	5	M Pattanayek	3/3/2009	
Cobalt	0.08J	μg/L	0.04	1	M Pattanayek	3/3/2009	
Lead	υ	μg/L	0.10	1	M Pattanayek	3/3/2009	
Manganese	3.4	μg/L	0.42	1	M Pattanayek	3/3/2009	
Selenium	U	μg/L	1.3	5	M Pattanayek	3/3/2009	
Thallium	U	μg/L	0.03	1	M Pattanayek	3/3/2009	
Vanadium	U	μg/L	3.4	5	M Pattanayek	3/3/2009	

TEST: Mercury	WE	THOD: EPA 24	D: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.13	0.2	A Wilson	3/3/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004218004

Project Name:

ROCKWOOD WTP Sample Description:

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

03/02/2009 10:35

Sampler's Name:

GEOFF KLEIN/ JUSTIN FISH

14:00

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To: Agency Invoiced:

TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

03/02/2009

Received By:

P D Wilson

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	MET	METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	03/03/2009				A Wilson	3/3/2009

TEST: ICP-MS	MET	THOD: EPA 20				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	3/3/2009
Barium	31	μg/L	2.5	5	M Pattanayek	3/3/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	3/3/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	3/3/2009
Chromium	υ	μg/L	2.0	5	M Pattanayek	3/3/2009
Cobalt	0.10J	µg/L	0.04	1	M Pattanayek	3/3/2009
Lead	0.10J	μg/L	0.10	1	M Pattanayek	3/3/2009
Manganese	13	μg/L	0.42	1	M Pattanayek	3/3/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	3/3/2009
Thallium	Ų	μg/L	0.03	1	M Pattanayek	3/3/2009
Vanadium	U	μg/L	3.4	5	M Pattanavek	3/3/2009

TEST: Mercury	ME	THOD: EPA 24	5.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	U	μg/L	0.13	0.2	A Wilson	3/3/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit